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09/843,781	04/30/2001	Woo Hyuk Choi	041501-5423	1083
7590 07/07/2006			EXAMINER	
Morgan, Lewis & Bockins LLP 1111 PENNSYLVANIA AVENUE, NW Washington, DC 20004			QI, ZHI QIANG	
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**MAILED**  
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**GROUP 2800**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/843,781  
Filing Date: April 30, 2001  
Appellant(s): CHOI, WOO HYUK

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David B. Hardy  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/16/2005 and 6/17/2005 appealing from the Office action mailed 7/26/2004.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 9, 12 and 15-16.

According to the appellant's arguments, the claims 1, 3-8, 17-19, 21-24 and 26 are allowable. Because the prior art of references do not explicitly show that the repair pattern has a portion overlapping the pixel electrodes as claimed in claim 1; and the prior art of references do not explicitly disclose the making process having an additional step of forming an insulating material to fill portions between the severed segments as claimed in claims 17 and 22.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

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The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

US 5,303,074	Salisbury	Apr.12,1994
US 5,459,410	Henley	Oct.17,1995

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9,12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,303,074 (Salisbury) in view of US 5,459,410 (Henley).

Claim 9, Salisbury discloses (Col.7, line 42 – col.10, line 60; Fig.2B) that a repair structure for a thin film electronic display such as liquid crystal display (LCD) that the

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scan line or data line is required to isolate a short circuit at the crossover point between the scan line and the gate line, in which the repair structure comprising:

- data line (103) and scan line (102) and crossing each other;
- scan line (102) can be shorted to the data line (103) at crossover point (118), and the scan line (102) has been severed at severance points (160A, 160B) to electrically isolate the portion of the line with short circuit (150) from remainder of scan line (102) (such that the scan line having first, second and third segments, wherein the second segment "the middle portion" is an electrically isolated from the first and third segments and located at a portion where the scan line and the data line overlap) (see Salisbury in col.8, line 60 – col.9, line 20 and Fig.2B);
- repair lines (122, 123) are electrically insulated from the scan line (102) and data line (103) by a dielectric material such as silicon oxide or silicon nitride (such that the repair pattern electrically isolated from the second segment of the scan line) (see Salisbury in col.7, line 65 – col.8, line 3);

Salisbury discloses the repair principle and mainly teaches the scan line (102) has been severed at severance points (160A, 160B) to electrically isolate the portion of the line with short circuit (150) from remainder of scan line (102), and that is the same principle as the scan line having first, second and third segments, and the repair pattern electrically isolated from the middle portion (second segment) and electrically connecting the first segment with the third segment of the data line or the scan line.

Salisbury does not explicitly disclose that the repair pattern bypasses to pixel electrodes adjacent to the data line.

However, Henley discloses (col.11, line 65 – col.12, line 6; Fig.12c) a cross-short repair structure that the scan line (15) is cut at locations (80,82) to sever the short circuit, and using laser removes passivation from the scan line in areas (84,86) to form a conductive bridge (88) which contacts each area (84,86) without shorting data line (13). Because the gate line (scan line) and the data line form the pixel region, as shown in Figs.6 and 14, and the repair pattern is a conductive bridge across the pixel region as shown in Fig.12c. The figures 6 and 14 show an electrical diagram that does not show the precise distance, and the figures show that the principle of the pixel region are defined by the data line and the gate line. Therefore, when forming the conductive bridge, the repair pattern of the conductive bridge, inherently, bypassing to pixel electrodes adjacent to the data line. According to the meaning of "bypass" (see Merriam-Webster's Collegiate Dictionary) that is a channel carrying a fluid around a part and back to the main stream, i.e., a shunt, such that the current goes to the shunt. Therefore, the repair pattern is a current shunt, and the repair pattern disclosed in Salisbury and Henley adjacent to the pixel electrodes and the data line, so that the repair pattern disclosed in Salisbury and Henley is bypassed to the pixel electrodes adjacent to the data line.

Henley indicates (col.2, lines 15-18) such repair structure improving the production yields, especially, for assembling high density active matrix LCD panels.

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Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange a repair pattern as claimed in claim 9 for improving the production yields of the high density active matrix LCD display.

Claims 12 and 15, lacking limitation is such that the repair pattern is formed along an upper portion of the scan line and the repair pattern has a "I" shape.

However, Henley discloses (Fig.12c) that the repair bridge (88) has a "[ shape, so that having a "I" shape that would be an obvious variation to connect the severe segments, and the repair patter, inherently, formed along an upper portion of the scan line to connect the severed segments, and that would have been at least obvious.

Claim 16, Salisbury discloses (col.7, lines 65-67) that the repair lines (122, 123) are electrically conductive, and using the conductive material such as metal as the repair pattern that would have been at least obvious as the metal having electrical conductivity.

#### **(10) Response to Argument**

Appellant's arguments concerning the claim 9 are not persuasive. Appellant argues that the reference Henley does not disclose the repair pattern overlapping adjacent pixel electrodes. Appellant's arguments of 6/17/2005 concerning the Figs. 6 and 14 of the reference Henley does not show the conductive bridge (88) bypass the pixel electrode adjacent to the scan line. However, the claim 9 does not claim the repair pattern has a portion overlapping the pixel electrodes. The claim 9 claims that the repair pattern bypass to pixel electrodes adjacent to the scan line.

The reference Henley shows (Fig.12c) the conductive bridge (88) (repair pattern) adjacent the scan line (15) and data line (13), and the scan line and the data line define the pixel region such that the conductive bridge (88) bypasses to pixel electrodes adjacent to the scan line.

1) Even though the Figs. 6 and 14 show an electrical diagram that does not show the precise distance, the pixel region is defined by the data line and the gate line. The Fig.12c shows the conductive bridge (88) to repair the line defect such as the gate line (15). The figures show a repair structure in which the conductive bridge (88) bypasses the pixel electrode adjacent the data line, because the gate line and the data line defining the pixel region, and the conductive bridge (88) crosses over the pixel region including pixel electrode that would bypass the pixel electrode and adjacent the scan line.

2) The term "bypass", according to the Merriam-Webster's Collegiate Dictionary, means "a channel carrying a fluid around a part and back to the main stream". Such that the conductive bridge (88) constitutes a channel bypassing the pixel electrode adjacent the scan line.

3) When assembly a high-density active matrix LCD panels need to use repair structure to repair the line defects. The Fig. 12s of Henley shows a conductive bridge bypass the pixel region (including pixel electrode) and the conductive bridge adjacent the gate line. Therefore, Henley teaches a conductive bridge structure bypass (may overlap or may not overlap) the pixel electrode and adjacent the gate line and using such conductive bridge bypass structure to improve the production yield.



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~~line and the gate define the pixel region) and using such conductive bridge bypass structure to improve the production yield.~~

Therefore, it would have been obvious to those skilled in the art to modify the repair structure of Salisbury with the teachings of the conductive bridge bypasses the pixel region as shown in Henley Fig.12c, since the skilled in he art would be motivated for improving the production yields.

**(11) Related Proceeding(s) Appendix**

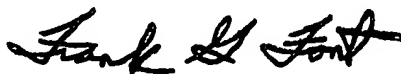
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejection for the claim 9, 12 and 15-16 should be sustained.

Respectfully submitted,

Conferees:

Frank G. Font , SPE AU 2883



Andrew H. Hirshfeld, SPE AU 2854

AHH

Mike Qi, Patent Examiner

